

**Identification of Respiratory Viruses and Epidemiological Factors Associated  
with Acute Respiratory Illness in Kampala and Entebbe Urban areas,  
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## ABSTRACT

Acute respiratory infections (ARI) are a leading cause of morbidity and mortality in both the developed and developing worlds. They are caused by a heterogeneous group of viruses with an overlap in their clinical presentations, which complicates patient management and prediction or estimation of public health impact. As the threat of zoonosis and pandemicity by some of the viruses increase, the need for differential diagnosis and identification of the specific pathogens involved in outbreaks has increased. This study aimed at identifying the prevalent viral strains associated with ARI in Uganda and to establish their epidemiological patterns of infection.

A cross-sectional study involving patients diagnosed with clinical ARI at Kiswa health center in Kampala and Entebbe hospital in Entebbe municipality was conducted during the months of September to December 2008. Both clinical and laboratory data were collected and a descriptive data analysis conducted for associations.

A total of 369 patients were enrolled (47.7% males and 52.3% females) with majority aged < 10 years. Cough was the most prevalent clinical presentation in addition to a fever ( $\geq 38^{\circ}\text{C}$ ). One or more viruses were detected in 172 (46.6 %) of patients; influenza A virus was the most prevalent (19.2%) followed by adenovirus (8.7%), human rhinovirus A (7.9%), human coronavirus OC43 (4.3%), parainfluenza virus type 1 (2.7%), parainfluenza virus type 3 (2.7%), influenza B (2.2%), respiratory syncytial virus B (2.2%), human metapneumovirus (1.4%), respiratory syncytial virus A (1.1%), parainfluenza virus type 2 (0.5%) and human coronavirus 229E (0.5%). Children aged less than 10 years were more susceptible to infection (OR = 1.9;  $p < 0.01$ ) than their older counterparts. Other risk factors for infection included; contact with ducks (OR = 1.6;  $p = 0.04$ ),

exposure to charcoal smoke (OR = 2.0; p = 0.03) and overcrowding ( $\geq 7$  persons living in the same house, OR = 3.0; p = 0.05 and  $\geq 5$  persons living in the same bedroom (OR = 3.6; p <0.01).

This study identified the prevalence levels of ARI-causing viruses and provided clues on their epidemiology in an urban population of Uganda. These results are useful as baseline knowledge for future surveillance strategies involving respiratory viruses in Uganda.